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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,133	07/29/2003	Neeraj Agrawal	JP920030083	6937

7590 03/10/2006
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EXAMINER

GORTAYO, DANGELINO N

ART UNIT	PAPER NUMBER
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2168

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/629,133		AGRAWAL ET AL.	
	Examiner		Art Unit	
	Dangelino N. Gortayo		2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20,23-26 and 28-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20,23-26 and 28-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/29/2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/29/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2168

DETAILED ACTION

1. Claims 1-20, 23-26, and 28-33 are pending.
2. Preliminary amendments to the claims filed on 7/29/2003 have been entered for examination.

Claim Objections

3. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

A claim 27 is not present in the amended claims and has been skipped by the applicant. Misnumbered claims 28-33 have been renumbered claims 27-32 respectively. Correction is required.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

Art Unit: 2168

from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-20 and 23-32 are rejected on the ground of nonstatutory double patenting over claims 1-16 of U. S. Patent No. 6,519,557 B1 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

Claims 1,23, and 28 of the instant application is broader than claim 1 of US Patent No. 6,519,557 B1. US Patent No. 6,519,557 B1 discloses a system and method for comparing two documents based on the hierarchal data structure of two documents.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention the claimed invention lacks patentable utility. The claimed invention does not produce a useful, concrete, and tangible result. Claim 1 describes a method for determining a degree of similarity between documents, but nowhere in the following dependent claims 2-20 is the result of the method used in a meaningful way. The dependent claims do not appear to add the necessary step(s) to achieve a practical application for the result as well, instead storing or generating additional information, not using the result (the calculated measure of similarity) in a practical application. Correction is required.

Claims 23-27 are rejected under 35 U.S.C. 101 because the claimed invention the claimed invention lacks patentable utility. The claimed invention does not produce a useful, concrete, and tangible result. Claim 23 describes a program storage device to perform a method for determining a degree of similarity between documents, but nowhere in the following dependent claims 24-27 is the result of the method used in a meaningful way. The dependent claims do not appear to add the necessary step(s) to achieve a practical application for the result as well, instead storing or generating

Art Unit: 2168

additional information, not using the result (the calculated measure of similarity) in a practical application. Correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 28-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The metes and bounds of the claims are unclear, as the independent claim refers to a computer system while the dependent claims refer to method steps. Correction is required.

Claims 29-31 recite the limitation "said method" in line 1 of claim 29, 30, and 31. There is insufficient antecedent basis for this limitation in the claim. Independent claim 28 refers to a computer system, with no prior mention of a method in the claim. Correction is required.

Claims 2, 24, and 28 recites the limitation "a Document Model Object representation" in lines 1-2 of each claim. There is insufficient antecedent basis for this limitation in the claim. This term is never used in the specification. For the purpose of

Art Unit: 2168

examination, the examiner replaces the term with a "Document Object Model representation", which is defined in the specification and by pertinent references.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-12, 14-20, and 23-32 are rejected under 35 U.S.C. 103(ea) as being unpatentable over Hattori et al. ("Hattori" US# 6,889,223 B2) in view of Cruz et al. ("Measuring Structural Similarity Among Web Documents: Preliminary Results"; Cruz et al. 1998; Lecture Notes in Computer Science. volume 1375. page 513.)

As per claim 1, Hattori discloses "A method for determining a degree of similarity between documents," (see Abstract) "storing, for at least two documents, labeled tree representations of respective documents;" (Figures 4-8 and column 8 lines 29-41, wherein the document storage is a structured document database that stores labeled, hierarchal tree structures of documents) "storing, for at least two documents, path representations relating to paths that occur in the documents from root nodes to leaf

Art Unit: 2168

nodes in the labeled tree representations of the respective documents;" (Figure 9 and column 9 lines 24-36, wherein an index storage contains a structure index that has path representation information relating to paths that occur in documents according to a tree representation) "and calculating a measure of similarity" (column 34 line 63 – column 35 line 37, wherein similarity values are calculated for documents based on nodes). Hattori does not expressly disclose "calculating a measure of similarity between two of the documents based upon the frequency of occurrence of similar paths specified by the path representations."

Cruz expressly discloses "calculating a measure of similarity between two of the documents based upon the frequency of occurrence of similar paths specified by the path representations." (Page 9 paragraphs 3-5, wherein a measure of similarity between two documents is measures through the difference between the two documents, as well as their similarities, and is analogous).

It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Hattori's method of comparing documents based on their structure with Cruz's method of calculating the similarity between two documents. This gives the user an additional source of information when organizing and querying databases holding documents. The motivation for doing so would be to classify documents based on their structural similarity and to measure the similarity between them.

As per claim 2, Hattori discloses “the tree representation is a Document Model Object representation.” (column 7 lines 62-64, wherein the tree structure of the document is a document object tree model).

As per claim 3, Hattori discloses “the step of generating a path representation for a path of a document as a sequence of labels representative from a root node to a leaf node in the labeled tree representation of the document.” (column 8 line 66 – column 9 line 16, wherein a sequence of labels representative of the tree representation are stored in a structure index using a structure document pass step).

As per claim 4, Hattori discloses “the step of storing, as path representations, sets of sequenced labels representative of distinct paths in a labeled tree representation of a corresponding document.” (column 9 lines 17-36, wherein structure index information is stored in an index storage that represent distinct paths in a labeled tree representation of a document).

As per claim 5, Hattori discloses “the step of storing a path dictionary (Dict.sub.paths=[p.sub.1, p.sub.2, . . . , p.sub.N]) of distinct paths collated from a tree representation for a document.” (column 12 lines 29-45, wherein a schema is made hat shows the distinct paths of a document from a tree representation and is analogous).

As per claim 6, Hattori discloses “the step of eliminating selected paths from the path dictionary (Dict.sub.paths).” (column 29 lines 27-35, wherein a structure evolving device generates a bind table that eliminates selected paths).

As per claim 7, Hattori discloses “paths that occur highly frequently or highly infrequently are eliminated from the path dictionary (Dict.sub.paths).” (column 29 lines

Art Unit: 2168

40-56, wherein an upper location and lower location evolving device is used by the structure evolving device to choose paths to eliminate to make a bind table showing paths and similarity).

As per claim 8, Hattori discloses "the step of computing the frequency of occurrence ($f_{sub.j}(p_{sub.i})$) of a path ($p_{sub.i}$) in a document ($d_{sub.j}$)." (column 33 lines 33-55, wherein path frequency is found based on tree level and the bind table).

As per claim 9, Hattori discloses "the step of computing the maximum number of instances ($f_{sub.max} = \max_{sub.ij} f_{sub.j}(p_{sub.i})$) in which a path ($p_{sub.i}$) in the document ($d_{sub.j}$) occurs." (column 34 lines 1-19, wherein a final bind table aggregates the number of times a path occurs in the document through a structure evolving device).

As per claim 10, Hattori discloses "the step of storing a representation of the document ($d_{sub.j}$) as a N-dimensional vector ($[d_{sub.j1}, d_{sub.j2}, \dots, d_{sub.jN}]$, where $d_{sub.jk} = f_{sub.j}(p_{sub.k}) / f_{sub.max}$, $1 < k < N$) of relative frequencies of occurrence ($f_{sub.j}(p_{sub.k})$) of paths ($p_{sub.k}$) in the document ($d_{sub.j}$)." (Figure 9 and column 9 lines 26-36, wherein the structure index stores information in a vectore showing node paths traveled and is analogous).

As per claim 11, Hattori discloses "the step of computing the minimum number of instances ($f_{sub.min} = \min_{sub.ij} f_{sub.j}(p_{sub.i})$) in which a path ($p_{sub.i}$) in the document ($d_{sub.j}$) occurs." (column 34 lines 1-19, wherein a final bind table is made using lower location evolving and is synonymous).

As per claim 12, Hattori discloses "the step of computing the similarity between a pair of documents ($d_{sub.i}, d_{sub.l}$) as a function ($\text{sim}(d_{sub.i}, d_{sub.l})$) of metrics

Art Unit: 2168

relating the number of paths common to the respective documents (d.sub.i, d.sub.l).”
(column 38 line 47 – column 39 line 11, wherein a similarity value is computed using path information from the structure of documents).

As per claim 14, Hattori discloses “the tree representation of a document includes a positional index, which represents, for a node (n), the number of previous sibling nodes with the same label as that of node (n).” (column 8 lines 42-57, wherein the tree representation includes an object ID including linking information).

As per claim 15, Hattori discloses “the step of storing as a path representation a set that defines positional information of sibling nodes under a parent node.” (column 8 lines 58-65, wherein within the structure index is positional information of sibling nodes under parent nodes).

As per claim 16, Hattori discloses “the step of storing precise path representations that precisely define a document structure, and generalised path representations that partially generalise structural aspects of precise path representations of a document.” (Figure 23 and column 4 line 1-3, wherein the schema that forms the bind table precisely defines the document structure and path representations).

As per claim 17, Hattori discloses “the step of calculating the measure of similarity involves determining a total number of precise path representations of one document that are either shared by the other document, or are a subsumed subset of at least one of the generalised path representations of the other document.” (column 38

Art Unit: 2168

lines 29-43, wherein the measure of similarity needs the path representation of documents to be calculated).

As per claim 18, Hattori discloses “the step of normalising the measure of similarity by a term that represents the number of unique path representations shared by the two documents.” (column 38 lines 29-34, wherein the measure of similarity is found using the number of levels to have a standard for documents and a similarity value is found).

As per claim 19, Hattori discloses “the number of unique path representations is calculated by adding the number of path representations for each document, and subtracting from this total the number path representations shared by the two documents.” (column 39 lines 29-55, wherein the structure components of a document are used to aggregate the number of paths and is compared to a target document's structure components).

As per claim 20, Hattori discloses “the step of storing as a path representation a sequence of terms separated by a delimiting symbol, in which each term is represented by a label and a parenthesised predicate that specifies the positional index of the term either specifically or generally.” (column 18 lines 30-43 and column 24 lines 45-60, wherein the path representation is shown from the structure of the document and is stored, including level ID, to show a positional index).

As per claim 23, Hattori discloses “A program storage device readable by computer, tangibly embodying a program of instructions executable by said computer to

Art Unit: 2168

perform a method for determining a degree of similarity between documents,” (see Abstract and column 40 lines 30-35) “storing, for at least two documents, labeled tree representations of respective documents;” (Figures 4-8 and column 8 lines 29-41, wherein the document storage is a structured document database that stores labeled, hierarchal tree structures of documents) “storing, for at least two documents, path representations relating to paths that occur in the documents from root nodes to leaf nodes in the labeled tree representations of the respective documents;” (Figure 9 and column 9 lines 24-36, wherein an index storage contains a structure index that has path representation information relating to paths that occur in documents according to a tree representation) “and calculating a measure of similarity” (column 34 line 63 – column 35 line 37, wherein similarity values are calculated for documents based on nodes). Hattori does not expressly disclose “calculating a measure of similarity between two of the documents based upon the frequency of occurrence of similar paths specified by the path representations.”

Cruz expressly discloses “calculating a measure of similarity between two of the documents based upon the frequency of occurrence of similar paths specified by the path representations.” (Page 9 paragraphs 3-5, wherein a measure of similarity between two documents is measures through the difference between the two documents, as well as their similarities, and is analogous).

It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Hattori’s method of comparing documents based on their structure with Cruz’s method of calculating the similarity between two documents. This gives the

Art Unit: 2168

user an additional source of information when organizing and querying databases holding documents. The motivation for doing so would be to classify documents based on their structural similarity and to measure the similarity between them.

As per claim 24, Hattori discloses “the tree representation is a Document Model Object representation.” (column 7 lines 62-64, wherein the tree structure of the document is a document object tree model).

As per claim 25, Hattori discloses “the step of generating a path representation for a path of a document as a sequence of labels representative from a root node to a leaf node in the labeled tree representation of the document.” (column 8 line 66 – column 9 line 16, wherein a sequence of labels representative of the tree representation are stored in a structure index using a structure document pass step).

As per claim 26, Hattori discloses “the step of storing, as path representations, sets of sequenced labels representative of distinct paths in a labeled tree representation of a corresponding document.” (column 9 lines 17-36, wherein structure index information is stored in an index storage that represent distinct paths in a labeled tree representation of a document).

As per claim 27, Hattori discloses “the tree representation of a document includes a positional index, which represents, for a node (n), the number of previous sibling nodes with the same label as that of node (n).” (column 8 lines 42-57, wherein the tree representation includes an object ID including linking information).

As per claim 28, Hattori discloses “A computer system operable for determining a degree of similarity between documents,” (see Abstract) “storing, for at least two documents, labeled tree representations of respective documents;” (Figures 4-8 and column 8 lines 29-41, wherein the document storage is a structured document database that stores labeled, hierarchal tree structures of documents) “storing, for at least two documents, path representations relating to paths that occur in the documents from root nodes to leaf nodes in the labeled tree representations of the respective documents;” (Figure 9 and column 9 lines 24-36, wherein an index storage contains a structure index that has path representation information relating to paths that occur in documents according to a tree representation) “and calculating a measure of similarity” (column 34 line 63 – column 35 line 37, wherein similarity values are calculated for documents based on nodes). Hattori does not expressly disclose “calculating a measure of similarity between two of the documents based upon the frequency of occurrence of similar paths specified by the path representations.”

Cruz expressly discloses “calculating a measure of similarity between two of the documents based upon the frequency of occurrence of similar paths specified by the path representations.” (Page 9 paragraphs 3-5, wherein a measure of similarity between two documents is measures through the difference between the two documents, as well as their similarities, and is analogous).

It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Hattori's method of comparing documents based on their structure with Cruz's method of calculating the similarity between two documents. This gives the

user an additional source of information when organizing and querying databases holding documents. The motivation for doing so would be to classify documents based on their structural similarity and to measure the similarity between them.

As per claim 29, Hattori discloses “the tree representation is a Document Model Object representation.” (column 7 lines 62-64, wherein the tree structure of the document is a document object tree model).

As per claim 30, Hattori discloses “the step of generating a path representation for a path of a document as a sequence of labels representative from a root node to a leaf node in the labeled tree representation of the document.” (column 8 line 66 – column 9 line 16, wherein a sequence of labels representative of the tree representation are stored in a structure index using a structure document pass step).

As per claim 31, Hattori discloses “the step of storing, as path representations, sets of sequenced labels representative of distinct paths in a labeled tree representation of a corresponding document.” (column 9 lines 17-36, wherein structure index information is stored in an index storage that represent distinct paths in a labeled tree representation of a document).

As per claim 32, Hattori discloses “the tree representation of a document includes a positional index, which represents, for a node (n), the number of previous sibling nodes with the same label as that of node (n).” (column 8 lines 42-57, wherein the tree representation includes an object ID including linking information).

Art Unit: 2168

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hattori et al. ("Hattori" US# 6,889,223 B2), in view of Cruz et al. ("Measuring Structural Similarity Among Web Documents: Preliminary Results"; Cruz et al. 1998; Lecture Notes in Computer Science. volume 1375. page 513.) and further in view of Schuetze et al. ("Schuetze" US# 6,598,054 B2).

As per claim 13, Hattori and Cruz do not expressly disclose "the function for computing the similarity between a pair of documents (d_i, d_l) ... is the quotient of a numerator, defined as the sum for all paths ($k=1 \dots N$) of the minimum number of instances ($\min(d_{ik}, d_{lk})$) in which paths occur in the respective documents (d_i, d_l), and a denominator, defined as the sum for all paths ($k=1 \dots N$) of the maximum number of instances ($\min(d_{ik}, d_{lk})$) in which paths occur in the respective documents (d_i, d_l)."

Schuetze discloses "the function for computing the similarity between a pair of documents (d_i, d_l) ... is the quotient of a numerator, defined as the sum for all paths ($k=1 \dots N$) of the minimum number of instances ($\min(d_{ik}, d_{lk})$) in which paths occur in the respective documents (d_i, d_l), and a denominator, defined as the sum for all paths ($k=1 \dots N$) of the maximum number of instances ($\min(d_{ik}, d_{lk})$) in which paths occur in the respective documents (d_i, d_l).\" (column 13 lines 13-28 and column 16 line 1-5, wherein the exact formula is used to show similarities between two documents, with d_1 and d_2 being two separate documents being compared).

It would have been obvious at the time of the invention for one of ordinary skill in the art to combine Hattori's method of comparing documents based on their structure

Art Unit: 2168

and Cruz's method of calculating the similarity between two documents with Schuetze's method of comparing two documents using a specific formula to find an exact measure of similarity. This gives the user a more precise and efficient way to measure similarities between documents. The motivation for doing so would be to decrease the difficulty in navigating document collections and to be able to perform searches based on the characteristics of the documents.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sanfilippo (US Pub 2003/0028564 A1)

Nakayama et al. (US # 6,622,139 B1)

Wheeler et al. (US # 6,738,759 B1)

Gansky et al. (US Pub 2004/0205454 A1)

Bernstein et al. (US # 6,826,568 B2)

Su et al. (US # 6,845,380 B2)

Igata (US # 6,853,992 B2)

Aiken (US # 6,658,626 B1)

Manber et al. (US # 6,920,609 B1)

Bharat et al. (US # 6,487,555 B1)

Art Unit: 2168


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dangelino N. Gortayo whose telephone number is (571)272-7204. The examiner can normally be reached on M-F 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A. Gaffin can be reached on (571)272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dangelino N. Gortayo
Examiner

DG


Debbie M. Le
Primary Examiner